

[54] **COERCIVITY CONTROL AND DETECTION
SIGNAL GENERATING PATTERN FOR
UNIAXIALLY ANISOTROPIC
FERROMAGNETIC CRYSTAL PLATELETS**

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[57]

ABSTRACT

There is disclosed coercivity control and signal generating and detection means comprising a two-dimensional lattice array of dots of magnetically susceptible material in intimate physical contact with the major plane surface of a uniaxially anisotropic ferromagnetic crystal platelet which has its major plane surface cut perpendicularly to the easy axis of magnetization of the crystal so as to be capable of sustaining movable cylindrical magnetic domains therein. Such crystals are used in digital signal translating and memory devices. In the conductor access type of device disclosed herein such domains are moved between predetermined locations in the crystal by electrical drive signals in magnetic field generating conductor loops. By providing the lattice array of dots, each of which is of a size having a maximum dimension which is a small fraction of the minimum diameter of the smallest bubble sustainable in the crystal, it is possible to control the coercivity of the crystal platelet and thereby achieve a greater stability of bubble positioning by the access conductors, a faster switching rate and a greater temperature independence for the necessary biasing field. The lattice array used for coercivity control is also such as to give rise to a signal generated by the bubble being moved with respect to the lattice array which signal may be used to detect the motion of the bubble.

8 Claims, 7 Drawing Figures

